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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/331,729	OSAN et al
	Examiner	Group Art Unit
	J. DOTE	1756

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on 5/16/03 ; 3/24/03 .

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 35, 36, 38-58 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☒ Claim(s) 53 is/are allowed.

☒ Claim(s) 35, 36, 38-52, 54-58 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☒ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____ .

☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____ .

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on May 16, 2003 (cert. mail. Apr. 17, 2003) has been entered.

2. The examiner acknowledges the cancellation of claim 37, the amendments to claims 35, 38-40, 42, 48, 49, 51, and 55, and the addition of claim 58 filed in Paper No. 23 on Mar. 24, 2003, which was entered upon the filing of the RCE. Claims 35, 36, and 38-58 are pending.

The marked-up version of amended claim 48 is not the same as the clean version of said claim. The marked-up version improper replaces the term "(iii)" recited in claim 48 previously filed in Paper No. 17 on Oct. 7, 2002, with the term "(iv)." The clean version recites the term "(iii)." The clean version of amended claim 48 automatically replaces the previously filed claim. Thus, the clean version of amended claim 48 has been entered.

(It is noted that the marked-up version of amended claim 42 erroneously labeled the claim as claim 41. The clean version of

the amended claim, which was entered, was correctly labeled as claim 42.)

3. The replacement paragraphs beginning at page 17, line 18, of the specification, filed in Paper No. 23, have not been entered, because they are improper under 37 CFR 1.121. As discussed in the advisory action, Paper No. 24, mailed on Apr. 2, 2003, the replacement paragraphs are attempting to amend paragraphs that are no longer present in the application. The paragraphs beginning at page 17, line 18, of the specification were previously amended in Paper No. 7 filed on Dec. 12, 2000. The amendment in Paper No. 7 capitalized the trademarks ISOPAR H® and REFLEX BLUE® R51. Both the marked-up and clean copies of the replacement paragraphs filed in Paper No. 23 do not contain said capitalized terms.

4. The examiner notes that the weight average molecular weight and intrinsic viscosity values recited in instant claims 35 and 49 have antecedent basis in originally filed claim 1.

The weight average molecular weight and intrinsic viscosity values recited in instant claim 48 have antecedent basis in the originally filed specification at page 7, lines 13-17, page 10, lines 17-21, and page 11, lines 1-2.

5. The objections to the specification set forth in the office action mailed on Dec. 19, 2002, Paper No. 20, paragraph 4, have been withdrawn in response to the cancellation of claim 37 and the amendments to claims 39 and 40.

The rejection of claim 55 under 35 U.S.C. 112, second paragraph, set forth in Paper No. 20, paragraph 7, has been withdrawn in response to the amendment to claim 55.

The rejections of claims 35, 37-41, and 44-52 under 35 U.S.C. 112, first paragraph, set forth in Paper No. 20, paragraph 9, have been withdrawn in response to the amendments to claims 35, 48, and 49.

The objection to claim 51 set forth in Paper No. 20, paragraph 10, has been withdrawn in response to the amendment to claim 51.

6. The disclosure is objected to because of the following informalities:

1) The specification discloses liquid toners and "liquid dried" systems that comprise an electrolytic solution. See the instant specification, toner preparation methods 4 and 5 at page 17. However, the specification identifies ISOPAR H as an electrolytic solution. ISOPAR H is known to be a non-polar hydrocarbon (more specifically, an isoparaffinic) liquid. See, for example, US 5,019,477, col. 6, lines 27-37. Hydrocarbon

liquids are not electrolytic in the conventional meaning of the term. Thus, it is not clear what applicants mean by the term "electrolytic solution."

2) According to Table 1, the toners in Examples 20-30 and Comparative Examples 5 and 6 are made by Toner preparation methods 4 and 5. It is not clear which examples are made by which method. (It is also not clear how the examples can be made by both methods 4 and 5. Method 4 is not the same as method 5.)

Appropriate correction is required.

Applicants' arguments filed in Paper No. 23 have been fully considered but they are not persuasive.

(1) Applicants assert that they have amended the term "electrolytic solution" to "carrier liquid." However, the replacement paragraphs beginning at page 17, line 18, of the specification, filed in Paper No. 23, were not entered. See paragraph 3, supra.

(2) Applicants assert that the toners in examples 20-30 and comparative examples 5 and 6 are made by Toner preparation method 5. Applicants argue that Toner preparation method 4 makes a precursor of a toner without a charge control agent and a colorant.

However, contrary to applicants' statements, Toner preparation method 4 does not make a precursor of a toner without a charge control agent and a colorant. Toner preparation

method 4 discloses mixing toner "obtained with the formulation of the dry polymerized system" and ISOPAR H. The dry polymerized system is described in Toner preparation method 3, which makes toner particles comprising 1 wt% of the charge controlling agent, COPY CHARGE NX, and 5 wt% of a magenta pigment. Furthermore, there is no evidence on the present record showing that examples 20-30 and comparative examples 5 and 6 are made by Toner preparation method 5. Thus, the objection set forth in item (2) above stands.

7. The examiner interprets the term "liquid dried system" recited in claim 53 as referring to a liquid toner that comprises toner particles that are obtained by a dry polymerization method, which forms toner particles by interfacial polymerization. See instant specification, Toner preparation method 4 at page 17. Applicants in their response filed in Paper No. 7 on Dec. 12, 2000, page 9, lines 4-5, agree with the examiner's interpretation of the term "liquid dried system."

The examiner notes that the specification defines the intrinsic viscosity recited in instant claims 35, 48, and 49 as the "inherent viscosity" at 135°C for 1 g of polyolefin resin having a cyclic structure uniformly dissolved in 100 ml of decalin. See the instant specification, page 16, lines 2-4.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 39, 40, 42-45, and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 39 and 40 are indefinite in the phrase "the polyolefin having a cyclic structure comprising a carboxyl groups introduced therein having uniformly dispersed therein fine particles of a metal thereby forming an ionomer having crosslinked structure" (emphasis added) for lack of unambiguous antecedent basis in claims 35 and 38, respectively. Claims 35 and 38, from which claims 39 and 40 respectively depend, do not recite a "polyolefin having a cyclic structure comprising a carboxyl groups . . . having uniformly dispersed therein fine particles of a metal thereby forming an ionomer having a crosslinked structure" as recited in instant claims 39 and 40. Rather, claim 35 recites a polyolefin resin having a cyclic structure. Claim 38 recites a polyolefin resin having a cyclic structure, wherein the polyolefin has a functional group selected

from the group consisting of a carboxyl group, a hydroxyl group, and an amino group.

Claim 42 is indefinite because it is not clear how the recited reaction product produces a structure crosslinked with an ester, amide, sulfide, or an ether, when the reactants (a) through (c) are not required to comprise an ester, amide, sulfide, or ether forming group.

Claims 44 and 45 are indefinite in the phrase "[t]he toner . . . further comprising at least one polar wax" for lack of unambiguous antecedent basis in claim 35. It is not clear whether the at least one polar wax refers to the functional imparting agent recited in instant claim 35 or to another component.

Claim 48 is indefinite in the phrase "at least three different resins or resin fractions having molecular weight ranges expressed by number average molecular weight (Mn), as measured by GPC . . . (iii) 25,000 or more, Mw of 15,000 or more, and an intrinsic viscosity of 0.25 dl/g or more which is <u>also part of the second resin or the second resin fraction</u>" for lack of unambiguous antecedent basis in claim 48. Claim 48 previously recites that the second resin or second resin fraction (ii) has a Mn of "7500 or more but less than 25,000." It is not clear how the resin or resin fraction (iii) having a Mn of "25,000 or more" is part of the second resin or resin fraction (ii) having a Mn of

"7500 or more but less than 25,000." Moreover, it is well known that Mw is greater than or equal to Mn at all times for any polymer sample.

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 36, 42, 43, and 55-57 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

(1) Instant claim 36 recites the term "hybrid polymers." The originally filed specification does not provide an adequate written description of said hybrid polymers. The originally filed specification discloses "a mixture or a hybrid polymers [sic] of any of the mentioned polymers" at page 11, lines 22-25. Originally filed claim 2 recites "other resin comprising one of a polyester resin, an epoxy resin . . . and other acrylate resin, a

mixture, hybrid polymers or blends of any of them." The "any of them" refers to the seven particular polymers recited in originally filed claim 2. The term "hybrid polymers," recited in instant claim 36, is broader than the disclosed hybrid polymers because it includes polymers comprising polymers not disclosed at page 11, lines 22-25, or recited in originally filed claim 2, such as polycarbonates or polymers of vinyl chloride.

(2) Claims 42 and 43 recite that the polyolefin resin having a cyclic structure of claim 35 has a crosslinked structure "by . . . [an] ester, amide, sulfide, or ether wherein the crosslinked structure is obtained by the reaction of (a) a diene monomer with (b) an acyclic olefin and (c) a cycloolefin."

The originally filed specification does not provide an adequate written description of said crosslinked polyolefin. The originally filed specification at page 13, lines 3-10, discloses that a crosslinked structure may be introduced into the polyolefin resin having a cyclic structure by reacting "a diene monomer, such as norbornadiene or cyclohexadiene, together with an acyclic olefin monomer and a cycloolefin monomer, followed by reacting the system, thereby obtaining a terpolymeric polyolefin having a cyclic structure." In other words, the reaction of a diene monomer, such as norbornadiene or cyclohexadiene, with an acyclic olefin and a cycloolefin monomer produces a terpolymer with a crosslinked structure. The specification at page 13,

lines 10-12, further discloses that the resulting terpolymer has "a terminal showing activity even without a crosslinking agent" (emphasis added). The specification does not disclose that the disclosed reaction product is crosslinked by an ester, amide, sulfide, or ether as recited in instant claim 42. Originally filed claim 7 recites that a polyolefin having a cyclic structure has a "structure crosslinked by a diene, ester, amide, sulfide or ether." Originally filed claim 7 does not recite that the crosslinked structure is obtained via the reaction recited in instant claim 42. Thus, there is no disclosure in the originally filed specification of a polyolefin "crosslinked by . . . [an] ester, amide, sulfide or ether wherein the crosslinked structure is obtained by the reaction of (a) a diene monomer with (b) an acyclic olefin and (c) a cycloolefin" as recited in instant claim 42.

(3) Instant claim 55 recites that said resin or said second resin fraction is present in "an amount from 7.4% to less than 50% by weight, based on the entire binder resin" (emphasis added). The originally filed specification does not provide an adequate written description of said amount. The originally filed specification discloses that a second resin or resin fraction having a Mn of 7,500 or more, a Mw of 15,000 or more, and an intrinsic viscosity (i.v.) of 0.25 dl/g or more, can be present in an amount of "less than 50% by weight based on the

entire binder resin." See the originally filed specification at page 4, lines 21-27, and originally filed claim 1. There is no disclosure in the originally filed specification for the recited lower limit of 7.4% by weight based on the entire binder resin. Example 30 exemplifies a liquid toner comprising 24 wt% of polyolefin resin No. 1, 7.4 wt% of a polyolefin resin No. 2, and 8 wt% of polymer No. 9. Polyolefin resin No. 2 has a Mn of 27,700, a MW of 66,100, and an intrinsic viscosity of 1.39 dl/g. It is not clear from the specification what is the basis of said weight percentages. In any event, if it is assumed that the total amount of binder resin is the sum of 24 wt%, 7.4 wt%, and 8 wt%, the amount of the polyolefin resin No. 2 would be 18.8 wt% based on the total amount of binder resin. The amount of 18.8 wt% based on the weight of the entire binder resin does not provide antecedent basis for the amount of 7.4 wt% recited in instant claim 55.

(4) Instant claims 56 and 57 recite a second resin or second resin fraction having a Mn of 7,500 or more.

The originally filed specification does not provide an adequate written description of such a second resin or resin fraction having a Mn of 7,500 or more. The originally filed specification discloses that a second resin or resin fraction having a Mn of 7,500 or more, a Mw of 15,000 or more, and an intrinsic viscosity (i.v.) of 0.25 dl/g or more, is present in an

amount of less than 50% by weight based on the entire binder resin. See the originally filed specification at page 4, lines 21-27, and examples 2, 8, 10, 19, 21, and 30, and originally filed claim 1. Originally filed claim 1 and the originally filed specification require that the second resin or resin fraction having a Mn of 7,500 or more that is added in an amount of less than 50 % by weight of the entire binder resin have certain minimum values of intrinsic viscosity and Mw. The second resin or resin fraction recited in instant claims 56 and 57 is broader than the disclosed second resin or resin fraction because it includes resins having a Mw of less than 15,000 and an intrinsic viscosity of less than 0.25 dl/g. There is no original disclosure of the broader conditions on the second resin recited in claims 56 and 57.

In addition, the originally filed specification discloses that the second resin or resin fraction having a Mn of 7,500 and the minimum values of Mw and intrinsic viscosity is used in an amount of less than 50% by weight of the entire binder resin. See the originally filed specification, page 4, lines 19-28, and examples 21 and 24, and originally filed claim 1. The specification at page 9, lines 10-15, further discloses that "if the amount of the high viscosity resin [i.e., the second resin or resin fraction having a Mn of 7,500 and the minimum values of Mw and intrinsic viscosity] used is 50% by weight or more based on

the entire binder resin, the uniform kneading properties extremely decline, impeding the toner performance. That is, a high grade image, i.e., a sharp image with high fixing strength and excellent heat response, cannot be obtained." Thus, there is no disclosure in the originally filed specification for the presence of a second resin or resin fraction broadly recited in instant claims 56 and 57.

Applicants' arguments filed in Paper No. 23 with respect to the rejection of claim 36 set forth in item (1) above have been fully considered but they are not persuasive. Applicants state that the "examiner has correctly pointed out" that "there is no other disclosure in the specification for hybrid mixtures." Applicants assert that originally filed claim 2 provides adequate support for the phrase "hybrid mixtures."

Contrary to applicants' statements, the rejection is not with respect to the term "hybrid mixtures," but to the broadly recited term "hybrid polymers." As discussed in item (1) above, the broad term "hybrid polymers" lacks antecedent in the originally filed specification. Accordingly, the rejection stands.

12. Claims 39 and 40 are objected to because of the following informalities:

In claim 39, The typographic error "_" in the phrase "cyclic structure_comprising."

In claims 39 and 40, the number mismatch in the phrase "a carboxyl groups" (emphasis added).

Appropriate correction is required.

13. Applicant is advised that should claim 40 be found allowable, claim 39 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

14. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

15. Claims 35, 36, 44, 45, 49-52, 55, and 58 are rejected under 35 U.S.C. 102(a) as being anticipated by WO 97/05529 (WO'529), as evidenced by applicants' admission at page 21 of the instant specification and the American Chemical Society (ACS) File Registry No. 361391-57-3. See the PTO translation of WO'529 for cites.

WO'529 discloses toners that are within the compositional limitations of the instant claims. The toners comprise a binder resin, charge control agent, a magenta pigment, and a functional imparting agent, such as HOECHST WAX E. See Toner preparation method I at page 11, and Examples 1 and 2 of Table 2-1 at page 13. The binder resins in Examples 1 and 2 are as follows:

Example 1 - polyolefin having a cyclic structure, T745, which has a Mn of 3800. See Table 3 at page 15. The binder resin is within the binder compositional limitation recited in instant claim 49. The polyolefin resin of WO'529 is also within the compositional limitations of the polyolefin having a cyclic structure recited in instant claims 50-52. T745 is identified by the instant specification at page 21 as a copolymer of ethylene and norbornene.

Example 2 - a polyolefin resin having a cyclic structure comprising polyolefin T745 and the polyolefin having a cyclic structure S-8007, which has a Mn of 35,000, Mw of 70,000, and intrinsic velocity of 0.8 dl/g, in an amount of 33% by weight of the entire binder resin. See Table 3. The polyolefin S-8007 is within the second resin compositional limitations recited in instant claims 35 and 49.

ACS File registry No. 361391-57-3 identifies Hoechst wax E as butylene and ethylene esters of fatty acids, montan-wax.

Thus, Hoechst wax E is within the compositional limitations of instant claims 44 and 45.

16. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO'529, as evidenced by applicants' admission at page 21 of the instant specification and the ACS File Registry No. 361391-57-3, as applied to claim 35 above, further in view of additional teachings in WO'529. See the PTO translation of WO'529 for cites.

WO'529, as evidenced by applicants' admission at page 21 of the instant specification and the ACS File Registry No. 361391-57-3, discloses a toner as described in paragraph 15 above, which is incorporated herein by reference.

WO'529 does not exemplify a toner comprising polyolefins having a cyclic structure as recited in instant claim 38. However, WO'529 discloses that the polyolefins having a cyclic structure may comprise a carboxyl, a hydroxyl, or an amino group. Translation, page 9, lines 14-20. WO'529 discloses that the incorporation of said groups in the polyolefin improves the compatibility of the resins with other resins, and the dispersibility of the pigment. Translation, page 9, lines 16-18.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of WO'529, to

incorporate a carboxyl, a hydroxyl, or an amino group in the polyolefins having a cyclic structure in the toner in WO'529's example 2 to improve the dispersibility of the magenta pigment in the binder resin of the toner, because that person would have had a reasonable expectation of successfully obtaining an uniformly colored magenta toner.

17. Claims 39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO'529, as evidenced by applicants' admission at page 21 of the instant specification and the ACS File Registry No. 361391-57-3, as applied to claim 35 above, further in view of additional teachings in WO'529. See the PTO translation of WO'529 for cites.

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO'529, as evidenced by applicants' admission at page 21 of the instant specification and the ACS File Registry No. 361391-57-3, as applied to claim 38 above, respectively, further in view of additional teachings in WO'529. See the PTO translation of WO'529 for cites.

WO'529, as evidenced by applicants' admission at page 21 of the instant specification and the ACS File Registry No. 361391-57-3, discloses a toner as described in paragraph 15 above, which is incorporated herein by reference.

WO'529, as evidenced by applicants' admission at page 21 of the instant specification and the ACS File Registry No. 361391-57-3, renders obvious a toner as described in paragraph 16 above, which is incorporated herein by reference.

WO'529 does not exemplify a toner comprising polyolefins having a cyclic structure as recited in instant claims 39-41. However, WO'529 discloses that the polyolefins having a cyclic structure may have a crosslinked structure by introducing a carboxyl group and adding a metal, such as zinc, copper, or calcium. Translation, page 9, lines 21-26. WO'529 discloses that the introduction of a crosslinked structure in the polyolefin improves the fixation of the toner. Translation, page 9, lines 21-22.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of WO'529, to introduce a carboxyl group and a metal in the polyolefins having a cyclic structure in the toner in WO'529's example 2 to introduce a crosslinked structure in the polyolefins, because that person would have had a reasonable expectation of successfully obtaining a toner with improved fixability.

18. Claims 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO'529, as evidenced by applicants' admission at page 21 of the instant specification and the ACS

File Registry No. 361391-57-3, as applied to claim 35 above, combined with US 5,707,772 (Akimoto). See the PTO translation of WO'529 for cites.

WO'529, as evidenced by applicants' admission at page 21 of the instant specification and the ACS File Registry No. 361391-57-3, discloses a toner as described in paragraph 15 above, which is incorporated herein by reference.

WO'529 does not exemplify a toner comprising a non-polar wax as recited in instant claims 46 and 47. However, WO'529 discloses that the functional imparting agent can be a wax having a melting point of 60 to 170°C. WO'529 does not limit the type of wax used. Translation, page 10, lines 18-24.

Akimoto teaches low molecular weight polyolefin waxes that have a melting point between 70 and 150°C. Col. 8, line 66, to col. 9, line 5; and Releasing agents 1 to 4 in Table 1 at col. 12. The polyolefin waxes are synthesized in the presence of a metallocene catalyst. Col. 11, lines 52-67. Akimoto discloses that toners that comprise said polyolefin waxes as releasing agents provide excellent images with excellent storage stability, little off-set, and "slight winding phenomena." See Toners 1 through 7 in Tables 2 and 3, and col. 16, lines 17-18.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Akimoto, to use Akimoto's low molecular weight polyolefin as the function

imparting agent in the toners disclosed by WO'529, because that person would have had a reasonable expectation of successfully obtaining toners having the advantages disclosed by Akimoto discussed above.

19. Claims 54 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO'529. See the PTO translation of WO'529 for cites.

WO'529 discloses a liquid toner that comprises 60 wt% of a carrier liquid, ISOPAR H, and 40 wt% of a mixture of solids comprising 1 part by weight of carbon black, 0.5 part by weight of a charge control agent, and 98.5 parts by weight of a binder resin. See the translation, Toner preparation method III at page 12, and Example 19 in Table 2-2 at page 14. Example 19 comprises a binder resin comprising a polyolefin having a cyclic structure comprising a resin having a Mn of 3,800 and a resin having a Mn of 35,000. The above liquid toner is within the compositional limitations recited in instant claims 54 and 57, except for the amount of binder resin, which must lie in the range of 85 to 95 wt%. However, WO'529 discloses that liquid toners can comprise 15 to 50 wt% of binder resin, 0-10 wt% of colorant, 0-5 wt% of a charge control agent, 0-10 wt% of a functioning agent, such as a wax, and 50 to 70 wt% of an liquid carrier, based on the total weight of the liquid toner.

Translation, Table 1 at page 3. Thus, the reference teaches that the mixture of solids can be present in an amount of 30 to 50 wt% based on the total weight of the liquid toner, where the binder resin is present in the mixture of solids in an amount of 50 to 100 wt%. The amount range of 50 to 100 wt% encompasses the range of 85 to 95 wt% recited in instant claim 54. Accordingly, the amount of binder resin is a result-effective variable, the variation of which is presumably within the skill of the ordinary worker in the art.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of WO'529, to vary the amount of the binder resin, through routine experimentation, in the liquid toner disclosed by WO'529, such that the amount would be within the range of 85 to 95 wt% as recited in instant claim 54, because that person would have had a reasonable expectation of successfully obtaining a liquid toner having the properties disclosed by WO'529. Translation, page 2, lines 8-13.

20. Applicants' arguments filed in Paper No. 23 with respect to the rejections over WO'529 in paragraphs 15-19 above have been fully considered but they are not persuasive. Applicants argue that WO'529 is not prior art. Applicants assert that they have perfected their claim to foreign priority under 35 U.S.C. 119, by filing a verified English-language translation of the priority

document, Japanese patent application Hei 8-348546, in Paper No. 19 on Nov. 4, 2002, and amending claims 35 and 49. Applicants argue that the translation provides antecedent basis for the subject matter recited in the instant claims.

The translation does not provide an adequate written description of the subject matter recited in instant claims 35, 36, 38-41, 44-47, 49-52, 54, 55, 57, and 58, as required under 35 U.S.C. 112, first paragraph. For example:

1) The translation does not disclose the generic "second resin or resin fraction having a Mn of 7,500 or more, a Mw of 15,000 or more, and an intrinsic viscosity of 0.25 dl/g or more" as recited in the instant claims 35, 36, 38-41, 44-47, 49-52, 55, 57, and 58. Rather, the translation discloses a second resin or resin fraction having a Mn of 7,500 or more, a Mw of 15,000 or more, an intrinsic viscosity (i.v.) of 0.25 dl/g or more, and a hot deformation temperature (HDT) of 70°C or more. See the translation, page 3, lines 5-11, and page 6, lines 19-25.

2) The translation also discloses that said second resin or resin fraction is present in an amount of less than 50% by weight based on the whole binder resin. See the translation, page 3, lines 6-12; and page 6, lines 19-25. Instant claim 57 does not limit the amount of the recited second resin.

3) The translation does not disclose the weight ranges recited in instant claim 54. The translation discloses a liquid

toner comprising: (1) 40% by weight of a mixture consisting of 1 part by weight of carbon black, 0.5 part by weight of a charge control agent, and 98.5 parts by weight of a binder resin; and (2) 60% by weight of an electrolytic solution (Isopar H). See the translation, paragraph bridging pages 16 and 17.

Thus, the subject matter recited in claims 35, 36, 38-41, 44-47, 49-52, 54, 55, 57, and 58 are not entitled to the benefit of priority under 35 U.S.C. 119. Accordingly, the rejections over WO'529 stand.

21. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

22. Claims 35, 36, 44-47, 49, 55 and 58 are rejected under the judicially created doctrine of obviousness-type double patenting

as being unpatentable over claims 1-5 of U.S. Patent No. 6,210,852 B1 (Nakamura'852). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of Nakamura'852 render obvious a toner as recited in the instant claims.

Nakamura'852 claims a toner comprising a binder resin, a function imparting agent, a colorant, and a charge control agent. The binder resin comprises a first polyolefin having a cyclic structure having a number average molecular weight (Mn) of 7,500 or less and a second polyolefin having a cyclic structure having a Mn of 7,500 or more, a weight average molecular weight (Mw) of 15,000 or more, and an intrinsic viscosity of 0.25 dl/g or more. See reference claim 5. The amount of the second polyolefin is less than 50% by weight of the entire binder resin. See reference claim 5. The binder resin is within the compositional limitations recited in instant claims 35, 36, 49, 55, and 58. Reference claim 4 recites that the function imparting agent can be a combination of a fatty acid amide, oxidized polyethylene wax and polyethylene wax. See reference claim 4. The combination of waxes is within the compositional limitations recited in instant claims 44-47.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in the claims of Nakamura'852, to make and use a toner that is within

the compositional limitations recited in the instant claims because that person would have had a reasonable expectation of successfully obtaining a toner capable of developing an electrostatically charged latent image.

23. Claims 35, 36, 38-41, 46, 47, 49, 50, 51, 55, and 58 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 16-19 and 21-27 of copending Application No. 09/000,330 (Application'330) in view of Diamond, Handbook of Imaging Materials, p. 170, and Akimoto.

This is a provisional obviousness-type double patenting rejection.

Application'330 claims a toner comprising a colorant, a charge control agent, and a binder resin. The binder resin comprises a polyolefin copolymer having a cyclic structure. Said polyolefin copolymer comprises a first resin having a number average molecular weight (Mn) of 3000 to 7000, and a second resin having a Mn of 7,500 to 50,000, a Mw of 15,000 to 100,000, and an intrinsic viscosity of 0.25 dl/g or more. The copolymer is derived from an alpha-olefin, an alicyclic compound having a double bond, and optionally a diene monomer. The amount of the second resin is not more than 50% by weight of the entire binder resin. See reference claim 22. The amount of not more than 50%

by weight meets the limitation of less than 50 wt% recited in instant claims 35, 49, and 55. Thus, the binder resin is within the compositional limitations recited instant independent claims 35 and 49 and in instant dependent claims 36, 50, 55, and 58. Reference claim 21 further requires that the alpha-olefin is ethylene, which meets the limitation recited in instant dependent claim 51. Reference claim 24 recites that the polyolefin having the cyclic structure comprises a functional group selected from the group consisting of a carboxyl group, a hydroxyl group, and an amino group, which meets the limitation recited in instant dependent claim 38. Reference claim 25 recites that the polyolefin having a cyclic structure further comprises a carboxyl group and is crosslinked by metal ions or dienes. Said polyolefin meets the limitations recited in instant dependent claims 39-41.

The claims of Application'330 do not recite the presence of a function imparting agent as recited in instant claims 35 and 49. However, the use of a function imparting agent is well-known in the toner art. Diamond discloses that it is well-known to incorporate a low molecular weight polyethylene or polypropylene wax into the toner to improve the flow of the toner at temperatures sufficient for toner fusing. Diamond, p. 170, lines 18-20. Akimoto teaches the use of low molecular weight polyolefin waxes that have a melting point between 70 and 150°C

as releasing agents (i.e., function imparting agents). The discussion of Akimoto in paragraph 18 above is incorporated herein by reference.

It would have been obvious to a person having ordinary skill in the art, in view of the subject matter recited in the claims of Application'330 and the teachings of Diamond and Akimoto, to incorporate Akimoto's low molecular weight polyolefin wax in the toner recited in the claims of Application'330 because that person would have had a reasonable expectation of successfully obtaining a toner that provides excellent images with excellent storage stability, little off-set, and "slight winding phenomena," as disclosed by Akimoto.

24. Claim 53 is allowable over the prior art of record.

Claim 48 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

WO'529 does not teach or suggest a toner comprising a polyolefin having a cyclic structure comprising at least three resins or resin fractions as recited in instant claim 48. Nor does WO'529 teach or suggest a liquid dried polymerized system as recited in instant claim 53. Nor do the claims of Nakamura'852 or Application'330 recite a toner as recited in instant claim 48 or a liquid toner as recited in instant claim 53.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (703) 308-3625. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (703) 308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9311 (Rightfax) for after final faxes, and (703) 872-9310 for other official faxes.

Any inquiry of papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Palestine Jenkins, whose telephone number is (703) 308-3521.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Janis L. Dote
JANIS L. DOTE
PRIMARY EXAMINER
GROUP ~~1600~~ 1700

JLD
July 2, 2003